

## A rare case of primary adenosquamous carcinoma arising from ovary

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Primary adenosquamous carcinoma of ovary is extremely rare malignancy. We report a case of primary adenosquamous carcinoma of the ovary which has not been reported in Korea before. The case of a 32 year old woman, evaluated for palpable abdominal mass is presented. Ultrasonography, abdomino-pelvic MRI, PET-CT were suggestive of a malignant neoplastic process. Surgical debulking operation including total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic lymph node dissection, para-aortic lymph node biopsy, total omentectomy, incidental appendectomy and low anterior resection of rectum were performed. Histopathology demonstrated primary adenosquamous carcinoma arising from the left ovary to the myometrium, serosa, rectal wall mass and omentum. The staging for ovarian tumor was consistent with FIGO stage IV. We present a case of this rare malignancy

**Key words:** Primary adenosquamous carcinoma; MMET; Ovarian cancer

### Introduction

Adenosquamous cell carcinoma of the ovary is a rare clinical entity, accounting for less than 1% of all malignant tumors of the ovary. The occurrence is associated with malignant transformation of an preexisting ovarian dermoid cyst or endometriosis.<sup>1-4</sup> It is attributable to the underlying pathophysiological mechanism, and this phenomenon is considered rare, as only 1 to 2% of dermoid cyst present this change.<sup>2,3</sup> A smaller group of squamous carcinomas are found in association with ovarian endometriosis.<sup>1,4</sup> The primary adenosquamous carcinoma of ovary is extremely rare malignancy.<sup>5-8</sup> The purpose of the report is to present a patient with primary adenosquamous carcinoma of ovary.

### Case Report

A 32-year-old, para 1, woman was referred to the general surgery clinic for a palpable mass on left lower abdomen. She had no history of weight loss, change in appetite, bowel habit or menstrual flow. A recent pap smear was negative for intraepithelial lesion or malignancy. On physical examination, she was not anemic with no jaundice, lymphadenopathy. Abdominal examination revealed a firm, mildly tender, mobile mass occupying most of the lower abdomen. There was no clinical evidence of ascites. Tumor marker profile was as follows: CA-125, 97.5 ng/mL (normal, 0 to 35 U/mL); CA 19-9, 34.8 U/mL (normal, 0 to 40 U/mL); CEA, 1.83 ng/mL (normal, 0 to 5.0 U/mL); alpha fetoprotein, 1.38 ng/mL (normal, 0 to 75 ng/mL). Abdomino-pelvic magnetic resonance imaging (MRI) and positron emission tomography-computed tomography (PET-CT) revealed a heterogeneous mass (11×9×8.5 cm) occupying the lower abdomen arising from left adenexa (Figs. 1, 2A). There was a focal nodular increased uptake in the right perihepatic space and focal increased uptake in the right ischium, suggestive of skeletal metastasis. Linearly increased uptake in the spi-

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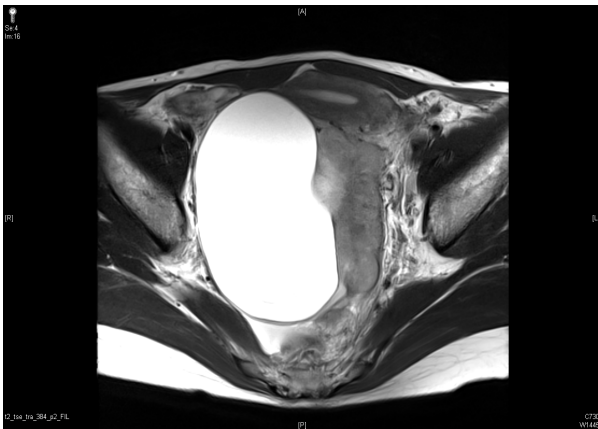
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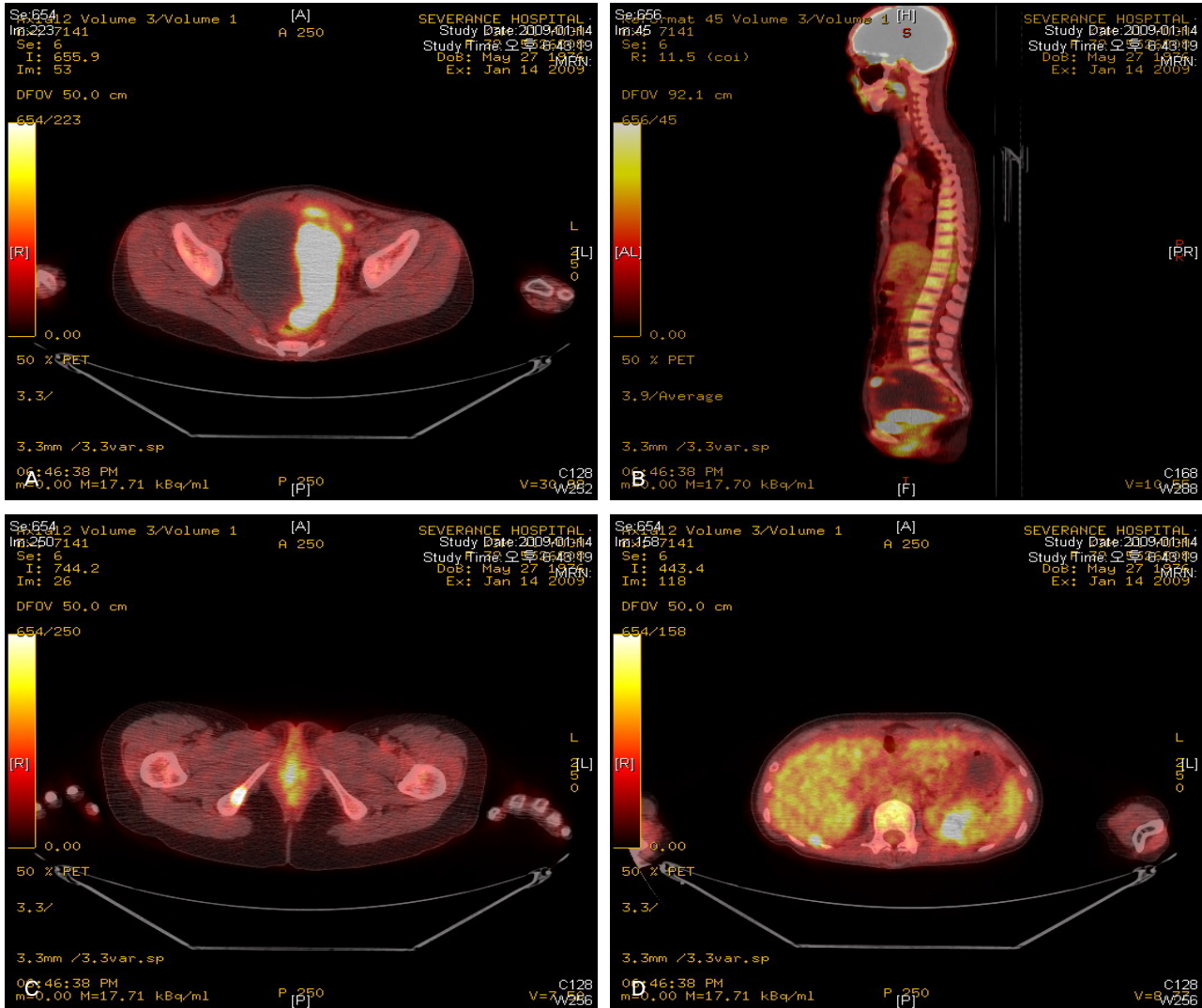
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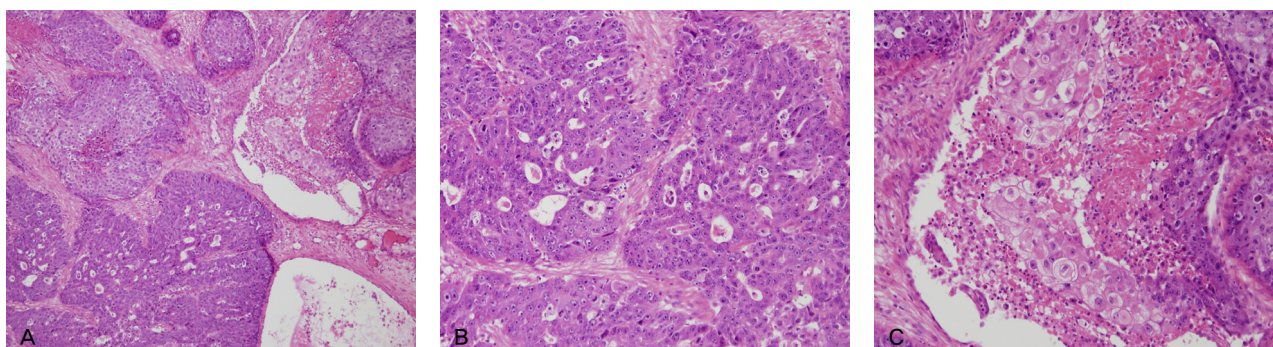
**Fig. 1.** Magnetic resonance imaging scan of the pelvis showing the tumour mass.

nal canal at the level of the T12-L1 was noted (Fig. 2B~2D).

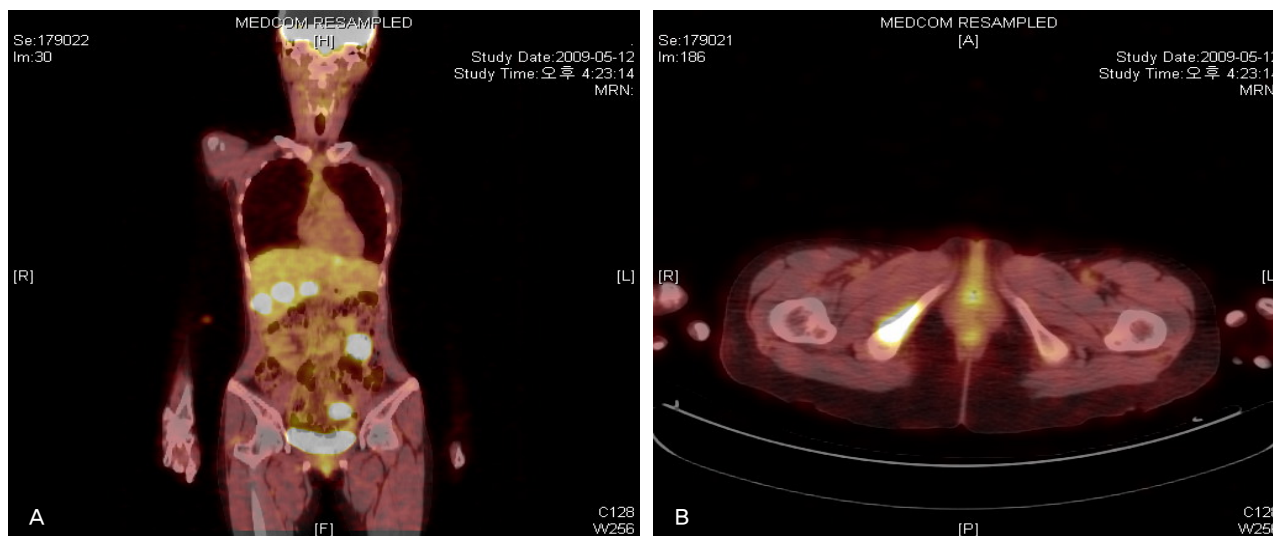
Operative findings were that about 11×9 cm sized left ovarian mass with normal ovarian parenchyma, and left ovarian tumor with rectal invasion. Left salpingo-oophorectomy was performed for frozen biopsy which revealed high-grade malignancy. She underwent debulking operation including total abdominal hysterectomy, right salpingo-oophorectomy, bilateral pelvic lymph node dissection, para-aortic lymph node biopsy, total omentectomy, incidental appendectomy and low anterior resection of rectum. There was no residual tumor. The pathologic finding confirmed malignant mixed epithelial tumor (adenosquamous carcinoma) from the left ovary with extension to the myometrium and serosa, rectum and omentum with evidence of



**Fig. 2.** (A) Positron emission tomography-computed tomography (PET-CT) of the pelvis showing the tumour mass. (B) PET-CT of the skeletal metastasis. (C) PET-CT of the skeletal metastasis. (D) PET-CT of the liver metastasis.



**Fig. 3.** (A) Histologic appearance of the resected ovarian tumor showing malignant mixed epithelial tumor (adenosquamous carcinoma) (H&E stain,  $\times 40$ ). (B) Histologic appearance of the resected ovarian tumor showing adenocarcinoma (H&E stain,  $\times 100$ ). (C) Histologic appearance of the resected ovarian tumor showing squamous cell carcinoma. Hyperkeratinization is noted (H&E stain,  $\times 100$ ).



**Fig. 4.** (A) Positron emission tomography-computed tomography (PET-CT) of the skeletal metastasis after chemotherapy. (B) PET-CT of the liver metastasis after chemotherapy.

keratinization. There was no concomitant teratoma or features suggestive of endometriosis. All the resection margins and the 27 resected lymph nodes were free from tumor. Microscopic examination showed a cyst wall lined by squamous cell carcinoma characterized by keratinized squamous cells with enlarged, hyperchromatic nuclei, increased nuclear/cytoplasmic ratios, loss of polarity of the nuclei, and frequent mitoses extending to the surface (Fig. 3A, 3C). In some areas the adenocarcinomas were markedly pleomorphic with well-formed glands (Fig. 3B, 3C). Histologic appearance of the resected ovarian tumor showed malignant mixed epithelial tumor (adenosquamous carcinoma). There was no evidence of the origin of teratoma or endometriosis. (Fig. 3) The surgical staging was compatible with International Federation of Gynecology and Obstetrics (FIGO)

stage IV of ovary. Her postoperative recovery was unremarkable.

The patient was treated with Paclitaxel  $175 \text{ mg/m}^2$  over 24 hours and Carboplatin area under curve 5 every 3 weeks. The patient's CA-125 was  $42.4 \text{ IU/mL}$  at the time of her second chemotherapy course. Despite adjuvant chemotherapy over the course of the next four months, her disease progressed. On PET-CT whole body scan, there was tumor progression with metastases to the liver, right ischium, and pelvis (Fig. 4). The patient's CA-125 was  $361.4 \text{ IU/mL}$ . We changed the chemotherapy regimen. The patient was treated with Belotecan  $0.5 \text{ mg/m}^2$  #1~5 days and Cisplatin  $60 \text{ mg/m}^2$  every 3 weeks. After chemotherapy, the patient refused further evaluation and treatment. She died 3 months later.

## Discussion

Ovarian cancer is the second common female genital tract malignancy. The common ovarian tumors originate from the surface epithelium of the ovary. The cases of primary adenosquamous cell carcinomas originate from ovaries are extremely rare. In rare case, it is reported that the dermoid cyst or endometriotic cyst provide a background of malignant transformation within components of the teratoma or endometriotic cyst.<sup>1-4</sup> In the reported cases of primary ovarian adenosquamous carcinoma, the majority were related with cervical dysplasia. Such a relation however was not apparent in our case as demonstrated by a negative pre-operative pap smear and confirmed by post operative surgical pathology.

Because of the rarity of the condition, the optimal management to primary ovarian adenosquamous cell carcinomas is unclear. Reported cases suggest that the surgical management is similar to that of adenocarcinomas of the ovary, including total abdominal hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic lymph node dissection, para-aortic lymph node biopsy, with additional steps as needed to ensure surgical debulking of all grossly visible mass. Optimal surgical cytoreduction and the surgical stage at presentation have been correlated with a significantly improved survival for adenosquamous carcinomas originating from dermoid or endometriotic cysts. The role of adjuvant therapy in the postoperative treatment of ovarian adenosquamous cell carcinomas is unclear. Because squamous cell carcinoma is radiation sensitive, radiotherapy has been used with the rationale of adenosquamous cell carcinoma being a radiosensitive tumor. However, there is no evidence that radiation therapy improves survival rate. In previous reports with ovarian squamous cell carcinoma, whole-pelvis radiation and concurrent weekly platinum-based chemotherapy following cytoreduction operation has shown benefit.<sup>9,10</sup> However, it is unclear whether patients with primary adenosquamous carcinoma of the ovary would benefit as much from similar adjuvant therapy.

In conclusion, primary adenosquamous carcinoma arising from the ovary is extremely rare. Because of the limited number of cases reported with adenosquamous cell carcinoma, not only the progress but also management of adenosquamous

cell carcinoma has not been determined. The primary management at present is surgical debulking and combination chemotherapy with newer drugs. However, in the absence of quality data, except for the very early stages of presentation, a role for adjuvant therapy is at present unclear.

Our patient showed a rapidly progressive disease in the four months after the operation. The chemotherapy regimens or their dosages may be ineffective for this malignant cell type of the ovary and more clinical investigations are needed.

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